



2016 STEM U! Summer Institute Strands

“Synthesizing Innovative STEM Learning”

Watershed Investigations (6-12)

Come explore the Logan River Watershed from the headwaters in Logan Canyon, through Cache Valley to the Bear River, and all the way to Great Salt Lake! We will integrate biology, ecology, chemistry, physics, engineering, and technology as we study the health of the aquatic ecosystems along the way. “Get your feet wet” with hands-on aquatic science!

MAKING for STEM connections (K-12)

When do Science, Technology, Engineering, and Math come together in our lives? When we are MAKING! See how creative, hands-on activities allow students to incorporate knowledge and skills from inside and outside of classrooms for meaningful learning and growth. Participants will complete activities with 3D design and printing, Scratch computer programming, laser cutting, Arduino microcontrollers, and more. Each teacher will leave with several free resources for digital design (Scratch and Tinkercad), a MaKey Makey, a SparkFun Inventor's kit, and her or his own projects to keep as examples.

Ethnobotany of the West (K-8)

Join Stokes Nature Center in an exploration of the uses of plants in the Intermountain West. Rediscover traditional botanical knowledge and customs, from medicinal remedies, to nutritional meals and teas, religious ceremonies, textiles, and artistic expression. Learn the right way to forage and harvest wild plants and take home a new found respect for the infinite adaptations of plants and the people who learned how to use them.

Subjects: Biology, Botany, Ecology, Chemistry, Art, History.

Get to the "root" of plant and human adaptations with this STEM U course!

Engage in Engineering! (K-12)

Interested in introducing engineering in your elementary or middle school classes, but not sure where to start? Join this collaborative, exploratory strand to learn about best practices in engineering activities, free resources and tips and tricks for success implementing engineering in your classroom. The strand will cover the engineering design process and how to authentically represent engineering experiences in your classroom!

The Natural History Museum of Utah introduces Research Quest (K-12)

Research Quest is an exciting new program for your middle school science classroom. It leverages the Natural History Museum of Utah's incredible collections using 3D and game technologies to support the development of students' critical thinking, collaboration, and science communication skills. This strand will introduce teachers not only to this web-based program, but also to the new Utah SEEd standards and the 3D science that inspired them. In addition, we will introduce you to 3D printing and show you how this technology can supplement your classroom. Then, spend a day with us visiting the Natural History Museum of Utah in Salt Lake City to view the collections that inspired Research Quest and see museum scientists in action.

Eyes in the Sky, Feet on the Ground! (6-12)

Discover the world of geographic information systems (GIS), remote sensing, global positioning systems (GPS), and unmanned aerial systems (UAS) (drones) as we learn about the many uses of these technologies inside and outside the classroom! We will explore how UAS are used safely and effectively to support classroom learning, how to use GPS in the classroom (including capturing, downloading, and mapping data), and explore the basics of GIS and how your school can sign up for GIS educational tools through state-wide GIS site licenses. Come ready to work! Plan to spend time outside collecting data and inside making maps and exploring easy-to-use tools that support curriculum at all levels.